**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

SINGULAR COMPUTING LLC,

       Plaintiff,

v.

GOOGLE LLC,

       Defendant.

C.A. No. 1:19-cv-12551-FDS

Hon. F. Dennis Saylor IV

**DEFENDANT GOOGLE LLC'S MEMORANDUM OF LAW
IN SUPPORT OF ITS MOTION FOR LEAVE TO SUPPLEMENT ITS
<u>NON-INFRINGEMENT AND INVALIDITY CONTENTIONS</u>**

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Defendant Google LLC ("Google") respectfully requests leave to serve supplemental non-infringement and invalidity contentions.[1]

I.   INTRODUCTION

Both the scheduling order and the Local Rules permit defendants to supplement their preliminary non-infringement and invalidity contentions upon a showing of "good cause." Dkt. No. 59 at 2; L.R. 16.6(d)(5). Good cause exists in this case as Google's supplemental contentions account for two developments subsequent to the March 31, 2021 *Markman* hearing.[2]

First, Google's supplemental non-infringement and invalidity contentions account for the Court's recently issued *Markman* order. Dkt. No. 354. In its *Markman* order, the Court construed certain terms of the asserted claims in ways different than Google had proposed that they be construed. The Local Rules of this District specifically identify the issuance of a *Markman* order that adopts constructions different than those a party proposed as a circumstance supporting a finding of good cause. *See* L.R. 16.6(d)(5)(A).

Second, Google's supplemental non-infringement contentions also account for a claim construction position that Plaintiff Singular Computing LLC ("Singular") took during the *inter partes* review (IPR) trials involving the asserted patents. The Patent Trial and Board (PTAB) invalidated a wide swath of the claims in the asserted patents, based on its conclusion that the core

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[1] The proposed amended contentions, which are explained in more detail in Part IV, are attached as exhibits. Exs. 1-6 reflect a redline comparison against Google's previously served contentions, while Exs. 7-12 are the "clean" proposed supplemental contentions, as follows: Exs. 1 & 7 (Second Amended Responsive Contentions Regarding Non-Infringement and Invalidity); Exs. 2 & 8 (supplemental Amended Non-Infringement Contentions claim chart); Exs. 3-6 & 9-12 (supplemental invalidity claim charts for Belanovic and Leeser, CNAPS, Cray T3D, and GRAPE-3). All exhibits are attached to the declaration of Asim Bhansali accompanying this motion.

[2] Per the Court's scheduling order, the parties were allowed to freely supplement their contentions up to 30 days before the March 31, 2021 Markman Hearing. Dkt. No. 59 at 2. After that time, a showing of good cause and leave of the Court are required. *Id.*

innovative feature that Singular had claimed—the "low precision high dynamic range (LPHDR) execution unit" —was disclosed in the prior art and thus not inventive. Singular is appealing that ruling and has identified the PTAB's rejection of Singular's proposed construction of LPHDR execution unit as grounds for appeal. Ex. 13 (Patent Owner's Notice of Appeal ('273 Patent), IPR2021-00179, Paper No. 66, at 1 (July 12, 2022) ("Patent Owner anticipates that the issues on appeal may include . . . the Board's claim constructions or determinations not to construe terms . . . .").[3] Significantly, Singular proposed a *different construction* of LPHDR execution unit in the PTAB than it did in this Court. And, that difference is material: were the Federal Circuit to adopt Singular's proposed claim construction on appeal, that construction would reinforce one of the several, already-disclosed reasons why Google's accused products cannot infringe the asserted patents. Good cause thus exists for Google to supplement its non-infringement contentions to account for the positions that Singular took on claim construction before the PTAB and continues to pursue on appeal to the Federal Circuit.

II.   PROCEDURAL BACKGROUND

Singular filed this case on December 20, 2019, and served its infringement contentions on September 4, 2020. Google served its invalidity and non-infringement contentions on November 6, 2020. Consistent with the Court's scheduling order, Google amended those contentions on March 1, 2021. Singular did not amend its contentions. The Court held a claim construction hearing on March 31, 2021.

Following completion of fact discovery and a related status conference held August 27, 2021, the case was stayed pending IPR proceedings before the Court issued a *Markman* ruling.

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[3] Singular's notices of appeal for the '156 and '961 patents (Exs. 14 & 15) identify the same grounds for appeal.

The final written decisions in the IPR proceedings issued on May 11, 2022. Google appealed those decisions on June 3, 2022, and Singular filed its own related appeals on July 12, 2022.

Following a status conference held on May 26, 2022, the Court issued a *Markman* ruling on July 27, 2022. Memorandum and Order on Claim Construction ("CC Order"), Dkt. No. 354. In that ruling, the Court adopted Singular's proposed constructions on the following terms:

Claim Term	Court's Construction
low precision and high dynamic range	as defined in the claim itself
execution unit	processing element comprising an arithmetic circuit paired with a memory circuit

During the parallel IPR proceedings, Singular proposed a different definition for "low precision high dynamic range execution unit" than the one Singular proposed in this Court. Before the PTAB, Singular proposed the following definition for LPHDR execution unit:

> [T]he proper construction of "low precision high dynamic range (LPHDR) execution unit" is "an execution unit that executes arithmetic operations *only* at low precision and with high dynamic range, wherein 'high dynamic range' and 'low precision' are defined according to the numerical requirements below."

See Ex. 16 (Patent Owner's Response ('273 Patent), IPR2021-00179, Paper No. 32, at 21 (Sept. 16, 2021)) (emphasis added).[4] The key difference between Singular's proposal to the PTAB and its proposal to this Court was the inclusion of the word "only," which would limit a LPHDR execution unit to one that performs *only* LPHDR arithmetic operations The PTAB rejected Singular's proposed construction, and also invalidated a wide swath of claims in the asserted

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[4] Singular's IPR filings for the patents-in-suit regarding its proposed constructions are substantively identical. *Compare* Ex. 16 at 21 (Patent Owner's Response ('273 Patent)) *with* Exs. 17 (Patent Owner's Response ('961 Patent), IPR2021-00155, Paper No. 32, at 21 (Sept. 16, 2021)) & 18 (Patent Owner's Response ('156 Patent), IPR2021-00165, Paper No. 32, at 21 (Sept. 16, 2021)).

patents because the claimed "low precision high dynamic range execution unit" was not inventive.[5]

Ex. 19 (Final Written Decision ('273 Patent), IPR2021-00179, Paper No. 57, at 2, 85 (PTAB May 11, 2022)); Ex. 20 (Final Written Decision ('961 Patent), IPR2021-00155, Paper No. 57, at 2, 86-87 (PTAB May 11, 2022)); Ex. 21 (Final Written Decision ('156 Patent), IPR2021-00165, Paper No. 57, at 2, 83 (PTAB May 11, 2022)). Given that Singular has not disavowed the claim construction position it took before the PTAB and is appealing the PTAB's determination that certain of Singular's claims are invalid, Google expects that Singular will maintain its position on appeal from the PTAB's ruling. *See* Ex. 13 (Patent Owner's Notice of Appeal ('273 Patent)) at 1.

III.   LEGAL STANDARD

Pursuant to the Court's scheduling order and Local Rule 16.6(d)(5), a party's preliminary contentions may be amended or supplemented by order of the Court upon a showing of good cause. The Local Rules set forth a "non-exhaustive" list of examples that may, absent undue prejudice to the nonmoving party, support a finding of good cause, including "a claim construction by the court that is different from that proposed by the party seeking amendment within 28 days of the court's claim construction ruling." L.R. 16.6(d)(5)(A); *see SoClean, Inc. v. Sunset-Healthcare Sols., Inc.*, No. 20-cv-10351-IT, Dkt. No. 89 (D. Mass. Nov. 30, 2020) (hereinafter, "*SoClean*") (citing L.R. 16.6(d)(5)(A) and finding: "Sunset needs no further showing to establish good cause, however, where the claim construction order expressly rejected the constructions initially put forth by Sunset and largely adopted those put forth by SoClean, Sunset sought the amendment promptly, and SoClean has shown no prejudice.").

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[5] Among the claims the PTAB invalidated were claims 4 and 13 of the '961 patent, which were the only asserted claims from the '961 Patent. *See* Ex. 20 at 86-87. The PTAB also invalidated independent claim 1 of the '156 Patent, from which asserted claim 7 of the '156 Patent depends. *See* Ex. 21 at 83.

Generally, the good cause inquiry considers the movant's diligence in amending its contentions and potential prejudice to the non-moving party or to the efficient resolution of this litigation if the motion to amend is granted. *See Abiomed, Inc. v. Maquet Cardiovascular LLC*, No. 16-cv-10914-FDS, 2020 WL 3868803, at *3 (D. Mass. July 9, 2020) (citing *O2 Micro Int'l Ltd. v. Monolithic Power Sys., Inc.*, 467 F.3d 1355, 1366-68 (Fed. Cir. 2006)).

IV.   ARGUMENT

A.   Good Cause Exists To Permit Google Leave To Supplement Its Non-Infringement And Invalidity Contentions.

Google has good cause to supplement its contentions because the proposed supplements all relate either to the Court's *Markman* order or to Singular's IPR claim construction position that it has identified as a potential grounds for appeal. Furthermore, Google's proposed supplements do not prejudice Singular. As explained below, Singular had ample opportunity to take discovery on the matters covered by the proposed supplements, and in the case of the non-infringement contentions, actually did take discovery on those very points.

1.   Google has good cause to supplement its contentions to address the Court's claim constructions that were different than those Google proposed.

Google seeks to supplement its non-infringement and invalidity contentions to address the Court's claim constructions. In the proposed supplemental non-infringement contentions, Google identifies why the accused TPUs cannot meet the hardware requirements imposed by the Court's construction. In the proposed supplemental invalidity contentions, Google's limited supplements identify with more specificity how several previously charted prior art systems would meet the hardware requirements added by the Court's *Markman* order, or why adding such hardware limitations to the previously charted systems would be obvious. These amendments fall within the identified bases of good cause in L.R. 16.6(d)(5)(A) because they simply conform the contentions

to ***Singular's*** claim construction position that the Court adopted. Furthermore, Google has timely brought this motion within the 28 days prescribed by Local Rule 16.6(d)(5)(A).

> **i.   The proposed supplements to Google's non-infringement contentions relate to the Court's *Markman* order and would not prejudice Singular.**

Google is not adding any new non-infringement arguments based on the Court's claim construction. Rather, Google's proposed supplements show how the Court's claim construction order reinforces the shortcomings of Singular's infringement contentions. Specifically, Google previously contended that Singular had failed adequately to identify a LPHDR execution unit in its infringement contentions. Ex. 8 (proposed supplemental Amended Non-Infringement Contentions (hereinafter "SNC")) at 1 (previously asserted contention that "Singular does not identify what it contends constitutes the LPHDR execution unit."). The earlier contentions also provided an explanation for why Singular's contentions were inadequate. *Id.* The proposed supplements to the non-infringement contentions explain that Singular has failed to identify a LPHDR execution unit, and emphasize the points of that failure in light of the *Markman* order— namely, that Singular fails to identify a LPHDR execution unit that:

- Meets the definition of "low precision and high dynamic range" "as defined in the claim itself." Ex. 8 (SNC) at 1. That is, Singular has not even attempted to show how any element in the accused products that Singular claims is an LPHDR execution unit meets all the numerical requirements in the claims.

- Includes "an arithmetic circuit paired with a memory circuit" in that Singular has not even attempted to identify the memory circuit it relies on, much less show that it would meet the definition of a memory circuit, in that memory must be "addressable." Ex. 8 (SNC) at 1-2.

- Has the features the Court concluded, in reaching its conclusion regarding claim

construction, that a POSITA would consider part of a processing element. Ex. 8 (SNC) at 2; Ex. 7 (proposed Second Amended Responsive Contentions Regarding Non-Infringement and Invalidity (hereinafter "PSC")) at 3-4. That is, Singular's contentions fail to identify any control vis-a-vis whatever it purports to identify as the processing elements, even though Singular's arguments and the Court's reasoning on claim construction require there to be such control in order to meet the claims.

These proposed supplements fall squarely within the kind of post-claim-construction amendments that L.R. 16.6(d)(5)(A) contemplates. The supplementation to further specify that Singular has failed identify or accuse any structure meeting the claim construction for either "low precision and high dynamic range" or "execution unit" falls squarely within the good cause that Local Rule 16.6(d)(5)(A) contemplates, because the Court adopted Singular's position rather than Google's. *See SoClean*, 1-20-cv-10351-IT, Dkt. 89. Indeed, courts in other districts with similar patent local rules routinely find good cause to permit amendment following issuance of a claim construction order that adopts a claim construction different from that proposed by the party seeking amendment. *See, e.g.*, *Treehouse Avatar LLC v. Valve Corp.*, No. C17-1860-RAJ, 2020 WL 2800723, at *1-2 (W.D. Wash. May 29, 2020) (granting leave to amend non-infringement and invalidity contentions following issuance of claim construction order adopting plaintiff's proposed construction); *Celgene Corp. v. Natco Pharma Ltd.*, No. 10-5197 (SDW)(SCM), 2015 WL 4138982, at *3-5 (D.N.J. July 9, 2015) (granting motion to amend invalidity contentions following issuance of claim construction order adopting plaintiff's proposed construction); *Positive Techs., Inc. v. Sony Elecs., Inc.*, No. C 11-2226 SI, 2013 WL 322556, at *2-4 (N.D. Cal. Jan. 28, 2013)

(granting motion to amend invalidity contentions following issuance of claim construction order wherein court adopted adverse construction).

Furthermore, the supplementation to identify the lack of control vis-a-vis the processing element also flows directly from the Court's claim construction order. Google's proposed supplements contend that, based on the Court's claim construction ruling, a processing element must be controllable based on control signals received by the processing element. This contention arises directly from the Court's claim construction order: The Court cited the intrinsic evidence from Fig. 4 to support its claim construction ruling that a processing element must include an arithmetic circuit paired with a memory unit. CC Order at 23-24. Moreover, the Court relied on the principle that the specification (including Figure 4) provides the "best mode" of practicing the invention to conclude that an execution unit must include not just an arithmetic circuit but also paired memory. *Id.* Figure 4 ***also*** discloses that the processing element receives control signals that control the arithmetic operations. *See* '273 Patent at 11:20-28 & Fig. 4. Importantly, the specification's description of Figure 4 states that control signals are used to determine how data is sent from the very memory that Singular proposed to—and the Court agreed to—read into the claim based on the specification: "We have not shown details of this mechanism, but ***the control signals*** 412a-d ***specify which Register or Constant memory values in the*** PE 400 or one of its neighbors to send to the data paths . . . ." *Id.* (emphasis added). In other words, the basis on which the Court included memory in the claim construction also implies that control is needed to direct that memory. *See* CC Order at 23-24. Whether or not the Court ultimately agrees with Google's interpretation of the *Markman* order, it is indisputable that Google's contention flows from the reasoning that Singular advanced and the Court accepted in adopting Singular's claim construction

position. *Positive Techs., Inc.*, 2013 WL 322556, at *2-4 (allowing amendment to add additional reference in light of patentee's position in claim construction briefing *and Markman* ruling).

Moreover, the Court's reliance on the specification, including Figure 4 and the requirement of control, is adverse to the position Google took in claim construction. The *Markman* order states expressly that it rejects Google's reliance on the claim language and extrinsic evidence proposing a simple execution unit. CC Order at 22-25. Instead, the Court, adopting Singular's position, found that the processing element must perform more "sophisticat[ed]" operations, and relied on Figure 4's disclosed features to reach its conclusion. *Id.* at 23-25. Singular took the position that "Figure 4 shows that the exemplary execution unit ('processing element') comprises memory circuits and arithmetic circuits." Singular's Preliminary Claim Construction Brief (Dkt. No. 112) at 6-7. Thus, while the additional requirement of a control circuit in a processing element is not included in the claim construction, it arises from the Court's adopting reasoning that is adverse to Google's position—and is directly related to the Court's adoption of a claim construction adverse to Google's position, *i.e.*, the execution unit construction. For that reason, the case law cited above that found good cause to amend contentions where the Court adopted an opposing party's construction also supports finding good cause for allowing Google to add contentions regarding the absence of control circuitry in the accused processing elements. *See, e.g.*, *Treehouse*, 2020 WL 2800723, at *1-2; *Celgene Corp.* 2015 WL 4138982, at *3-5 (granting motion to amend invalidity contentions following issuance of claim construction order adopting plaintiff's proposed construction); *Positive Techs., Inc.*, 2013 WL 322556, at *2-4.

Singular cannot claim prejudice from the proposed supplementation of Google's non-infringement contentions because the amendments all relate to Singular's ***own*** positions. Moreover, Singular had ample opportunity to, and did, take discovery on the very points as to

which Google seeks to supplement its non-infringement contentions. By way of example only, the list below shows where Singular asked Google engineers Andy Phelps and/or Norman Jouppi about each issue, thus demonstrating that Singular was aware of and able to address these questions in discovery:

- Precision and dynamic range in Google's accused TPUs. Ex. 22 (Phelps Dep., ███████, July 14, 2021) (explaining the parameters of the bfloat number format, which Singular contends establish its precision and dynamic range).

- Presence of memory in Google's accused TPUs. *Id.* at ███████ ███████ ██ ███████████████████████████████████ ; *see also* Ex. 23 (Jouppi Dep., ████ ████ July 16, 2021 (same)).

- Use of control signals in Google's accused TPUs. Ex. 22 (Phelps Dep.) at ████ ██ ██ ██████ .

Thus, in light of the good cause for doing so and the lack of prejudice to Singular, Google should be permitted to supplement its non-infringement contentions as set forth in the proposed amendments.

> **ii.** **Google proposes supplementing its invalidity contentions to identify more specifically how the Court's construction of "execution unit" is met in the prior art, which supplementation would not prejudice Singular.**

Google has limited its supplements to four system prior art references that were disclosed and charted in its previously served contentions. Google proposes limited supplements to make its

10

contentions more specific regarding the following points as described below and identified in the redlined contentions attached as Exhibits to this Motion:

- That using a memory circuit paired with an arithmetic circuit was generally known in the art. Ex. 7 (PSC) at 15.

- That such a memory circuit was also known in conjunction with specific types of prior art systems that Google previously identified in its contentions. *Id.*

- That four specific prior systems that Google previously identified and charted—the Belanovic and Leeser FPGA library, the Cray T3D, GRAPE-3, and CNAPS—either included such a memory circuit and/or it would have been obvious to include such a memory circuit in these systems. Ex. 7 (PSC) at 24; Ex. 9 (Proposed supplemental invalidity claim chart for Belanovic and Leeser) at 5-6; Ex. 10 (Proposed supplemental invalidity claim chart for CNAPS) at 8-9; Ex. 11 (Proposed supplemental invalidity claim chart for Cray T3D) at 6-7; Ex. 12 (Proposed supplemental invalidity claim chart for GRAPE-3) at 2-3.

- That the same four specific prior art systems also included control of processing elements and/or that it would have been obvious to include such control with the prior art systems. *Id.*

As explained in Part IV.A.1.i above with respect to supplementing the non-infringement contentions, Google has good cause to make these amendments because they relate to the Court's claim construction ruling (and the reasoning supporting that ruling), which adopted Singular's positions and was adverse to Google's positions. Moreover, as with Google's accused TPUs, Singular had ample time and opportunity to pursue discovery regarding these prior art systems. Each system was identified and charted in Google's original invalidity contentions served in

November 2020, and again in the amended contentions served in March 2021.[6] Moreover, as

explained in Part IV.A.1.i above, Singular was aware of each of the issues on which Google seeks

supplementation during the discovery period. Thus, Singular could have sought related discovery

regarding any of these systems during the fact-discovery period (but chose not to do so).

> **2.   Google has good cause to supplement its non-infringement contentions to address Singular's pursuit at the Federal Circuit of a claim construction position that provides Google with an additional non-infringement position; this supplement would not prejudice Singular.**

Google also seeks to provide more specificity for a non-infringement position supported

by the construction of "LPHDR execution unit" that Singular advocated in the PTAB. Singular

offered a claim construction in the IPR proceedings for this term that would give Google another

clear non-infringement argument. The PTAB rejected Singular's construction, and if Singular had

conceded—or opted not to challenge—the PTAB's ruling, then Google would not need to

supplement its contentions. But because Singular appealed the PTAB's ruling finding most of the

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[6] Ex. 7 (PSC), at 5-6 (stating in the previously served contentions that "In these Responsive Contentions, including the claim charts, any citation to a printed publication or other reference describing a prior art system should also be construed to include a reference to the prior art system itself."); *id.* at 20 (Belanović and Leeser: "Using the Wildstar reconfigurable architecture (based on Splash 2) and using a Xilinx XCV1000 FPGA, Belanović and Leeser implemented custom floating-point formats. . . . And years before Dr. Bates disclosed his alleged inventions, Belanović and Leeser made a parameterized floating-point library for use with reconfigurable hardware, a library which has since been publicly available for anyone to implement custom formats for FPGAs. *See* https://coe.northeastern.edu/Research/rcl/projects/floatingpoint/index.html."); *id.* at 31 (Cray T3D: "[N]o later than 1994, Cray Research, Inc. produced and sold the T3D, a massively parallel supercomputer architecture. A Cray T3D system contained hundreds or even thousands of microprocessors capable of performing arithmetic operations on reduced precision floating-point numbers."); *id* at 24 ("More recent references that also precede the priority date(s) of the asserted patents also disclose the use of LPHDR execution units to perform arithmetic operations on logarithmic representations. This includes the GRAPE-3 computer, developed by S.K. Okumura and others at the University of Tokyo."); *id.* at 38 ("That realization led to the creation of numerous ANN systems incorporating parallel processing elements designed to perform calculations that had "typically use[d] 32-bit floating point math" using 8- or 16-bit fixed point math instead. . . . These systems included, for example, the CNAPS system developed by Adaptive Solutions . . . .").

12

patents' claims unpatentable, the non-infringement issue not only remains live for purposes of this case, but is reinforced by Singular's claim construction position.

Again, the PTAB found that Singular's core idea of a low precision high dynamic range execution unit was disclosed in the prior art and not inventive, thereby rendering many of the asserted claims invalid. Singular's core argument for patentability in the PTAB rested on its claim construction regarding LPHDR execution unit, which differs from—and is more narrow than— the construction it successfully advanced in this Court. Singular can therefore be expected to advance this claim construction position in its pending appeal of the PTAB's ruling. Thus, to prevent Singular from benefiting by taking inconsistent positions as between the Federal Circuit (and PTAB) on the one hand and this Court on the other, Google should be allowed to supplement its non-infringement contentions to further specify the non-infringement argument that will be reinforced if Singular were to prevail on its pending appeal in the Federal Circuit.

As stated, Singular proposed the following construction for a LPHDR execution unit in the PTAB: "an execution unit that executes arithmetic operations *only* at low precision and with high dynamic range, wherein 'high dynamic range' and 'low precision' are defined according to the numerical requirements below." Ex. 16 (Patent Owner's Response ('273 Patent)), at 21. The key difference between that proposed construction and the construction Singular successfully obtained in this Court is the inclusion of the word "only." Singular took the position in the PTAB that a LPHDR execution unit must do *only* what Singular considers "low precision" arithmetic, and that an execution unit that can do what Singular considers single-precision arithmetic is not an LPHDR execution unit. Singular's expert in the IPR, Dr. Sunil Khatri, who was also Singular's expert at the claim construction stage in this case, testified that arithmetic units that perform single-precision (not low precision) multiplication ▮▮▮▮▮▮▮ cannot meet the definition of a LPHDR

execution unit, even if the units ████████████████████████████████████

████████████████████. *See* Ex. 24 (Khatri Dep., ████████, in IPR dated October 21, 2021);

see also id. at ████████. As Dr. Khatri explained, the prior art Tong reference could perform ██████

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████████████. Thus, in Dr. Khatri's view, Tong did not meet the definition of LPHDR unit that

Singular proposed in the IPR proceedings:

> I would look at my definition of LPHDR units. And, you know,
> we've talked about my — the definition, which is basically what a
> person of ordinary skill in the art would understand the LPHDR unit
> to mean. And if we applied that test, you know, Tong would fail that
> test.

Id. at 128:20-129:3.

Singular's IPR claim construction position and Dr. Khatri's admission matter here because

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████████████████████████████████ Thus, if Singular were to prevail on its PTAB claim

construction in the Federal Circuit, ████████████████████████████████

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14

Google engineer Norman Jouppi testified about it during his deposition. Ex. 23 (Jouppi Dep.) at

███████████████████. As Dr. Jouppi explained: ██████████████████████████████

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███████████████████████████ *Id.* at ███████; *see also id.* at ███████. He further explained that

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██████████████████████████████████ *Id.* at ███████████. In subsequent

questioning, Singular's counsel acknowledged ███████████████████████████████████

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Id. at ███████.

Good cause has been found to amend contentions to incorporate parties' positions during

IPR proceedings. *See Microspherix LLC v. Merck Sharpe & Dohme Corp.*, No. 17-3984 (CCC),

2021 WL 2652009 (D.N.J. June 28, 2021) (granting motion to amend invalidity contentions based

in part on opposing party's arguments during *inter partes* review proceedings). The same

justification exists here; indeed, it is even stronger than in the usual case, given that Singular

appears likely to take an inconsistent position between the construction it would likely advocate

in the Federal Circuit—and what it did advocate in the PTAB—and the constructions it obtained

in this Court.

Moreover, Singular suffers no prejudice from this proposed amendment. Google already provided notice of this non-infringement ground in its original contentions, where it stated:

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Ex. 2 ████.   Furthermore, as noted, Singular was aware of the functionality in question during discovery and asked questions about it in deposition.

Thus, because Google has good cause for doing so and Singular would not be prejudiced, Google should be permitted to supplement its non-infringement contentions to take into account the claim construction position is expected to advance on appeal to the Federal Circuit following the PTAB's rejection of that position.

V.   CONCLUSION

For all the foregoing reasons, Google's motion to supplement its non-infringement and invalidity contentions should be granted.

Respectfully submitted,

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16

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17

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